

**REMARKS**

Claims 1-6, 8-22 and 24-33 remain pending in this application. Claims 5, 6, 21, 22, 28 and 32 are withdrawn from consideration with traverse. In the Office Action dated October 27, 2003, claims 1-4, 8-20, 24-27, 29-31, and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Flynn (U.S. Patent No. 6,256,775) in view of Orton et al. (U.S. Patent No. 6,275,983).

By this amendment, Applicant has corrected a minor informality on page 2 of the specification. Based on the following remarks, Applicant respectfully requests that the rejection of claims 1-4, 8-20, 24-27, 29-31 and 33 under 35 U.S.C. § 103(a) as well as the restriction requirement be withdrawn and the claims allowed.

**The interview conducted January 22, 2004**

Applicant wishes to thank Examiners St. John Courtenay, III, and Van H. Nguyen for the courtesies extended during the interview held on January 22, 2004 with Applicant's representatives. During the interview, Applicant's representatives urged that the restriction requirement mailed July 2, 2003 be withdrawn for the reasons given in the response filed July 28, 2003, which are hereby incorporated by reference.

Applicant's representatives further explained the differences between the recitations of the pending claims and Flynn and Orton et al. In response, Examiners Courtenay and Nguyen agreed to withdraw the restriction requirement, reconsider the current rejection in light of Applicant's arguments and either issue a new non-final Office action treating

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each of claims 1-6, 8-22 and 24-33 or allow the claims to issue. Applicant submits the following arguments to amplify those advanced in the interview.

**The rejection of claims 1-4, 8-20, 24-27, 29-31 and 33 under**

**35 U.S.C. § 103(a)**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim elements. Furthermore, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." See M.P.E.P. § 2143.01 (8<sup>th</sup> Ed., Aug. 2001), quoting *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Finally, there must be a reasonable expectation of success. See M.P.E.P. § 2143 (8<sup>th</sup> Ed. 2001), pp. 2100-122 to 127.

**I. Claims 1, 9, 17 and 25**

As to claim 1, Flynn does not teach or suggest determining whether register data corresponding to a selected thread has changed from a previous interrupt and providing an indication of the change for the selected thread. Instead, the information maintained in the register HID0 (cited by the Examiner in support of the rejection) is related to the *current* state of the thread and, further, Flynn does not determine whether this state has

changed. That is, the register HID0 merely identifies the state of a thread at certain points during execution of a program. Nothing in Flynn provides an indication as to whether the current state of the register has changed from a previous interrupt of all the threads, as recited by claim 1. Rather, action is taken based on whether the current state of the register is "1" or "0." See, e.g., Flynn, col. 12, ll. 50-56 and 58-65; col. 13, ll. 1-2; and col. 14, ll. 8-17.

Further, Orton et al. does not correct the above noted deficiencies of Flynn. Accordingly, because Flynn and Orton et al., either alone or in combination, do not teach or suggest the recitations of claim 1, Applicant respectfully requests that the rejection of this claim under 35 U.S.C. § 103(a) be withdrawn and the claim allowed.

Also, the Examiner admits that Flynn fails to teach periodically interrupting execution of all the threads. To address this shortcoming, the Examiner relies on the interrupt processes taught by Orton et al. However, Orton et al. does not teach periodically interrupting execution of all the threads. Rather, the suspend count and interrupts taught by Orton et al. (and relied upon in the rejection, see col. 11, ll. 33-35 and 46-50) are episodic rather than periodic. Accordingly, Flynn and Orton et al., either alone or in combination, do not teach or suggest each and every element of claim 1, and Applicant respectfully requests that the rejection of this claim under 35 U.S.C. § 103(a) be withdrawn and the claim allowed.

Moreover, there is no motivation or reasonable expectation of success to combine the teachings of Orton et al. with Flynn because Flynn teaches away from periodic interruptions. Instead, Flynn switches to a monitoring thread only upon

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detection of a selectable event, and then records information regarding that event. See Flynn, summary of the invention, and Fig .3. Accordingly, Flynn relies on non-periodic events to initiate thread monitoring processes. Consequently, one skilled in the art would not be motivated to add extraneous periodic interruptions to Flynn. Indeed, such implementations would possibly cause Flynn to overlook the selectable events the system is designed to monitor (e.g., L1 cache misses). Therefore, there is no reasonable expectation of success that would motivate one of ordinary skill to implement periodic interrupts in Flynn. Accordingly, Flynn and Orton et al., either alone or in combination, do not teach or suggest each and every element of claim 1, and Applicant respectfully requests that the rejection of this claim under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

Claims 2-4, 26, and 27 depend from claim 1. As explained, claim 1 is distinguishable from Flynn in view of Orton et al.. Accordingly, claims 2-4, 26, and 27 are also distinguishable from these references for at least the same reasons set forth for claim 1, and Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

Further, Flynn and Orton et al., alone or in combination, do not teach or suggest comparing stored data corresponding to the selected thread with register information following a previous interrupt, as recited in claim 2. Instead, the current state of the HID0 register taught by Flynn is compared to logical "1" or "0." See, e.g., Flynn, col. 12, ll. 50-56 and 58-65; col. 13, ll. 1-2; and col. 14, ll. 8-17. Accordingly, Applicant

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respectfully requests that the rejection of this claim under 35 U.S.C. § 103(a) be withdrawn and the claim allowed.

Also, Flynn does not teach or suggest computing a value corresponding to the stored data and determining a relationship between the computed value and the previously stored register information, as recited in claim 3. Flynn, col. 11, line 38, through col. 12, line 67, is relied upon to teach these features. However, Applicant respectfully disagrees. Nothing in Flynn teaches determining a relationship between a computed value and previously stored register information. As argued above, Flynn compares the current state of the register to logical "1" or "0" and not to previously stored register information. Accordingly, Flynn does not teach or suggest the features of claim 3, and Applicant respectfully requests that the rejection of this claim under 35 U.S.C. § 103(a) be withdrawn and the claim allowed.

Further, Flynn does not make a determination as to whether a computed value matches previously stored register information. Accordingly, Flynn does not teach or suggest updating a memory segment to reflect that the selected thread is running when it is determined that the computed value and the previously stored register value do not match, as recited in claim 4. Therefore, Applicant respectfully requests that the rejection of this claim under 35 U.S.C. § 103(a) be withdrawn and the claim allowed. .

Moreover, Orton et al. is not relied upon to teach, and in fact does not teach the above deficiencies of Flynn with respect to claims 2-4, 26 and 27. Because Flynn and Orton et al., either taken alone or in combination, do not teach or suggest the recitations

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of claims 2-4, 26, and 27, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

Claims 9, 17 and 25 include recitations similar to those of claim 1. As explained, claim 1 is distinguishable from Flynn and Orton et al. Accordingly, claims 9, 17, and 25 are also distinguishable from these references, and Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

Claims 10-12, and 18-20 depend from claims 9 and 17, respectively. As explained, claims 9 and 17 are distinguishable from Flynn and Orton et al. Accordingly, claims 10-12 and 18-20 are also distinguishable from these references for at least the same reasons set forth in connection with claims 9 and 17. Further, claims 10-12 and 18-20 include recitations similar to those of claims 2-4, respectively. As discussed above, claims 2-4 are also distinguishable from Flynn and Orton et al. Therefore, claims 10-12 and 18-20 are also distinguishable from these references for at least the same reasons set forth for claims 2-4, and Applicant respectfully requests that the rejection of claims 10-12 and 18-20 under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

## **II. Claims 5, 13, and 21**

Claims 5, 13 and 21 include recitations similar to those of claims 1 and 3. As explained, claims 1 and 3 are distinguishable from Flynn and Orton et al. Accordingly, claims 5, 13 and 21 are also distinguishable from these references for at least the same

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reasons set forth for claims 1 and 3, and Applicant respectfully requests that the rejection of claim 5 under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

Claims 6, 28 and 14, 15 and 22, 32 depend from claims 5, 13 and 21, respectively. As explained, claims 5, 13 and 21 are distinguishable from Flynn and Orton et al. Accordingly, claims 6, 28 and 14, 15 and 22, 32 are also distinguishable from these references for at least the same reasons set forth in connection with claims 5, 13 and 21. Further, claim 6 includes recitations similar to claim 4. As explained, claim 4 is distinguishable from Flynn and Orton et al. Therefore, claim 6 is also distinguishable from these references for at least the same reasons set forth for claim 4. Accordingly, Applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

### **III. Claims 8, 16, and 24**

Claims 8, 16, and 24, include recitations similar to those of claim 1. As explained, claim 1 is distinguishable from Flynn and Orton et al. Accordingly, claims 8, 16, and 24 are also distinguishable from these references for at least the same reasons set forth in connection with claim 1, and Applicants request that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

Claims 29 and 33 depend from claims 8 and 24, respectively. As explained, claims 8 and 24 are distinguishable from Flynn and Orton et al. Accordingly, claims 29 and 33 are also distinguishable from these references for at least the same reasons set forth in connection with claims 8 and 24, and Applicant respectfully requests that the

rejection of claims 29 and 33 under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

**Conclusion**

In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of claims 1-6, 8-22 and 24-33.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: January 27, 2004

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